CLAIMS:

We claim:

1. A porous film comprising a blend of (a) at least one non-film forming material and (b) at least one film forming polymer, the film having a network of pores or channels throughout the film, wherein the film forming polymer is present in the blend from between 5 and 35%, based on the total volume of polymer and the film is non-friable.

2. The porous film according to claim 1, wherein the blend is prepared from water-borne latex dispersion polymer particles.

3. The porous film according to claim 1, wherein the film forming polymer has a Tg not greater than 20° C and the non-film forming material is a polymer having a Tg of at least 30°C.

4. The porous film according to claim 1, wherein the non-film forming material is selected from the group consisting of acrylic latex polymers, hollow polymer particles, core-shell polymers, acrylic polymers, polymer encapsulants, large dimension emulsion polymers, inorganic compositions, inorganic compositions with adsorbed compounds, and mixtures thereof.

5. The porous film according to claim 1, wherein the film forming polymer is composed of water-borne latex particles having diameters no greater than 20 % of the largest dimension of the non-film forming material.

6. The porous film according to claim 1, wherein the porous film maintains porosity up to 160°C.

7. A porous film comprising a water-borne latex dispersion of a multi-stage polymer having at least one non-film forming material and at least one film forming polymer, the porous film maintains porosity up to 160° C, wherein the film forming polymer has a Tg no greater than 20° C, the non-film

forming material is a polymer having a Tg of at least 30°C, wherein the film forming polymer is present in the blend from between 5 and 35%, based on the total volume and the film is non-friable.

8. The porous film according to claim 7, wherein the non-film forming material is selected from the group consisting of acrylic latex polymers, hollow polymer particles, core-shell polymers, polymer encapsulants, large dimension emulsion polymers, inorganic oxides, aluminosilicates, silicates, carbonates and mixtures thereof..

9. A process for producing porous films comprising the steps of depositing a composition of claim 1 in a liquid state on a substrate and evaporating a carrier medium below 100 °C.

10. A process according to claim 9, wherein the evaporation of the carrier medium occurs between 0°C to 80°C.

11. The process according to claim 9, wherein the composition is selected from the group consisting of a blend of at least one non-film forming material and at least one film forming polymer, a multi-stage polymer having at least one non-film forming material and at least one film forming polymer, a large dimension emulsion polymer and combinations thereof.

12. The process according to claim 9, wherein the film maintains porosity up to 160°C.

13. The process according to claim 9, wherein catalysts are entrapped within the film, the catalysts selected from the group consisting of chemical catalysts, bacteria, yeast, fungi, plant algal and mammalian cells and combinations thereof.

14. The process according to claim 13, wherein the films are utilized in a chemical or biochemical reactor utilized to perform a chemical transformation.

15. The process according to claim 9, wherein the porous films are applied using printing processes which are selected from the group consisting of flexographic printing, gravure printing, ink jet printing, and laser printing.

16. The process according to claim 13 wherein two porous films are prepared, each film comprising a different catalyst and the films are in intimate contact with each other.